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SOURCE Periodicals and book as indicates.

DATA ON SOVIET INSTITUTES WORKING IN
ELECTRONICS AND ELECTRICAL ENGINEERING

Comment: The following presents information on Soviet institutes working in electronics and electrical engineering. Numbers in parentheses refer to appended sources.

The following works and scientists have been identified with the institutions named.

Moscow Power Engineering Institute imeni Molotov (MEI)

- Komar, V. G., "Selenium Rectifiers." (1)
- Bragin, S. M., "High-Voltage Cable Lines in Electric Power Systems." (1)
- Ionkin, P. A., "Equivalent Circuits for Electrical Networks With Magnetic Coupling." (1)
- Gorokhov, N. V., "Single-Phase Induction Regulators." (1)
- Glazunov, A. A., "The Dependence of Loss Time on the Duration of Maximum Load and Power Factor." (1)
- Lozonosov, V. Yu., "The Electric Field of Three-Phase Cables." (2)
- Petrov, V. P., "Automatic Regulator Controls of Streetcars." (2)
- Morozov, D. P., "The Theory of Transient Processes of Electric Drives With Flexible Couplings." (3)
- Zhdanov, P. S. Reported to be director of the Chair of Electric Networks and Systems. (4)

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Trukhanov, A. A., Shershov, S. F., Rozenman, A. S. Kheyster, I. M., Gluzunov, A. A., and Gludinskiy, P. G. Participated in a discussion on the "Waste of Metal and Decreasing the Power Losses in the Electrification System of the USSR." (4)

The following were mentioned in connection with the institute in an article written by I. I. Grudinskiy and I. I. Lebedev: G. N. Petrov, V. A. Fabrikant, A. I. Kandalov, A. V. Shcheglyayev, M. P. Vukalovich, K. M. Polivanov, and T. L. Zolotarev. (5)

Gutkin, L. S., "Theory of Superregenerative Receivers." (6)

Kharkov Electrical Engineering Institute

Aronov, R. L., "Heating of Electric Motors During Repeated Short-Time Duty." (7)

Mayevskiy, O. A., "Generalized Diagram for Ionic Electric Drive Operation." (7)

The following is taken from an article by A. L. Vayner.

Fourteen professors (two of them academicians), four doctors of science, 38 docents (26 candidates of science), and 62 other scientific workers conducted important work throughout the war period. Their primary effort was directed toward the development of new electrical equipment for the petroleum industry, new high-temperature electric furnaces, and new methods for protecting electrical equipment from lightning. The institute was able to produce a unique lightning generator capable of producing bolts having charges up to 8.4 million volts. This generator is the largest and most powerful in the USSR.

Many associates of the institute were in the service during the war and conducted research work under actual front-line conditions. Prof Dr O. Bron, Engineer-Colonel, carried out important research on magnetic mines. Bron was awarded the Order of the Fatherland War First Class and the medal "For the Defense of Sevastopol'." Bron was aided in some of his research by N. A. Babakov, Candidate of Technical Sciences.

In 1942, Docent I. M. Kovtun completed, at N Plant, a series of very important studies on starters and generators. The results of these studies were later applied to tank production.

During 1941 and 1942, much work was done on methods for the utilization of evacuated equipment for the benefit of industry. Prof Dr R. L. Aronov and Prof A. L. Matveyev were active in this work. For example, the institute was able to improve the operation of circular saws at the Khar'kov Electromechanical Plant. In addition, Prof R. L. Aronov studied the amortisseur windings of generators. Matveyev, who for many years had been studying the phenomena of electric currents, put into practice many methods for the conservation of electric power, particularly as it applies in the metal-cutting industry. He also supervised work conducted at the Power Engineering Institute of the Academy of Sciences Ukrainian SSR on power conservation per unit item produced. Matveyev's theories were given practical application at several plants in the Urals and in Moscow. The methods suggested by Matveyev for conserving power were adopted by the Commission of the Division of Industrial Power Engineering, People's Commissariat of Power Stations USSR, for use by metal-cutting enterprises. In addition, Matveyev conducted experiments in the Urals at the Power Engineering Institute of the Academy of Sciences Ukrainian SSR on efficient methods for power supply of industrial enterprises.

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In conjunction with the rapid expansion of electrical networks in the Urals and in Siberia, many problems arose with respect to the performance of electrical networks under various climatic conditions. Much research was devoted to determining the action of electricity under conditions of permafrost soils.

Electrification of agriculture in Siberia under wartime conditions was very difficult in view of serious shortages of conducting materials. A satisfactory system was established on a 220-v line from Kansk to Brashnoye village (24 km) where the power was carried partly by wire and partly through the ground.

At present, the institute is working on the possibility of putting the whole Krasnoyarsk system on this two-conductor (wire and ground) system.

During the war, experiments were continued on work started in 1940 by Docent A. L. Vayner, Docent A. K. Potuzhnyi, and Docent S. M. Fertik on the problem of proper conveyance of lightning discharges through poor conducting soils. The results of this research are most important in that they will provide for the safe operation of power systems.

In high-current engineering, certain difficulties were experienced with rectifiers; glass-mercury rectifiers had a short life span of only 1,000-2,000 hours. Docent M. M. Tarashchanskiy and Docent S. M. Fertik, together with the late Academician V. M. Khrushchev, worked out the manufacture of the so-called mechanical rectifier. An experimental model was constructed which operated on 100 amperes and 300 volts. After tests, several of these new rectifiers were manufactured and are now undergoing practical testing at one of the Ural mines. The new rectifier is light, very efficient, and has an unlimited service life.

Many of the personnel of the institute during the years of evacuation worked at various electrotechnical enterprises. Some of the personnel, such as Prof A. A. Skoromkhov, Prof Dr Ya. L. Geronimus, and Prof Dr V. N. Kilyanitsa, taught at schools. (8)

Institute of Radio Reception and Acoustics

At a joint meeting of the Vacuum-Tube and Broadcasting Sections of the Scientific Technical Council, Ministry of the Communications Equipment Industry USSR, A. K. Godzevskiy, representing the Institute of Radio Reception and Acoustics, discussed the problems confronting vacuum-tube designers, with particular reference to efficient cathodes, variable μ tubes for af amplification, high μ output tubes, etc. (9)

Central Scientific Research Electrical Engineering Laboratory (TsNIEL), Ministry of Power Stations

Ul'yanskiy, N. A., "Communications Equipment in High-Voltage Rural Distribution Networks." (7)

Bykovskiy, Ya. L., "Test Exploitation of Pulse Meters for Measuring Lines Constructed by This Laboratory." (10)

Burgsdorf, V. V., "Investigation of the Protection of Power Systems From Lightning." A. I. Gershengorn, N. P. Yemel'yanov, O. V. Livanova, A. I. Rogacheva, and Ye. S. Fedorov were reported to be associates of the laboratory." (11)

Engineer S. M. Gortinskiy has written a survey which describes the organization, functions, work, and personnel of the laboratory. (12)

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S-E-C-R-E-THigh-Frequency Currents Shop, Avtozavod imeni Stalin

The chief of the shop was reported to be K. Z. Shepelyakovskiy. (13)

SOURCES

1. Elektrichestvo, No 2, 1947
2. Ibid., No 3, 1947
3. Ibid., No 4, 1947
4. Ibid., No 5, 1947
5. Vestnik Vysshey Shkoly (Herald of the Higher School), No 3, 1953
6. Radiotekhnika, No 3, 1948
7. Elektrichestvo, No 10, 1950
8. Uchenyye Khar'kova (Scientists of Khar'kov) (LC No Q127. R9U35)
9. FDD 00-W-18359
10. Radiotekhnika, No 4, 1948
11. Elektrichestvo, No 2, 1949
12. Ibid., No 11, 1948
13. Radiotekhnika, No 5, 1949

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